

## WHAT IS CLAIMED IS:

5           1. A method for producing a mammalian peptide which comprises:

              growing plant cells containing an integrated sequence comprising,

10           a first expression cassette having in the direction of transcription (1) a transcriptional and translational initiation region functional in said plant cells, (2) a structural gene coding for said mammalian peptide, and (3) a termination region,

15           whereby said structural gene is expressed to produce said mammalian peptide; and

              isolating said mammalian peptide substantially free of plant cell components.

20           2. A method according to Claim 1, wherein said integrated sequence ~~includes~~ <sup>comprises</sup> a second expression cassette having in the direction of transcription (1) a transcriptional and translational initiation region functional in said plants, (2) a structural gene coding for a peptide which allows for selection of plant cells expressing said peptide, and (3) a termination region.

25           3. A method according to Claim 2, wherein said transcriptional and translational initiation region is derived at least in part from a transcriptional and translational initiation region of a Ti- or Ri-plasmid.

30           4. A method according to Claim 3, wherein said transcriptional and translational initiation region regulates expression of mannopine synthase, octopine synthase or nopaline synthase.

35           5. A method according to Claim 1, wherein said transcriptional and translational initiation

region of said first expression cassette regulates expression of a plant gene.

6. A method according to Claim 1, wherein  
5 said integrated sequence [includes] ~~comprises~~ a boundary region from T-DNA.

7. A method for producing an interferon which comprises:

10 growing plant cells containing an integrated sequence comprising,

15 a first expression cassette having in the direction of transcription (1) a transcriptional and translational initiation region functional in said plant cells and derived from a region which regulates expression of a T-DNA gene, (2) a structural gene coding for an interferon, and (3) a termination region functional in said plant cells,

20 whereby said structural gene is expressed to produce said interferon, and

isolating said interferon substantially free of plant cell components.

said plant cells are  
25 dicotyledon plant cells<sup>8.</sup> A method according to Claim 7, wherein  
said integrated sequence [includes] ~~comprises~~ a second expression cassette having in the direction of transcription (1) a transcriptional and translational initiation region functional in said plant cells, (2) a structural gene coding for an enzyme which imparts antibiotic resistance, and (3) a T-DNA boundary.

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35 9. A method according to Claim 8, wherein said first expression cassette transcriptional and translational initiation region regulates expression of the mannopine synthase gene of T-DNA.

10. An expression cassette comprising a DNA sequence having in the direction of transcription a transcriptional and translational initiation region functional in plant cells, a structural gene coding for 5 a mammalian peptide, and a termination region functional in plant cells.

11. An expression cassette according to Claim 10 including joined to said DNA sequence a second 10 expression cassette comprising a second transcriptional and translational initiation region functional in plant cells, a structural gene coding for a peptide providing a phenotypic property capable of selection in plant 15 cells, and a termination region functional in plant cells.

12. An expression cassette according to Claim 11, ~~including~~ <sup>comprising</sup> a T-DNA boundary.

20 13. A DNA construct comprising a first expression cassette having in the direction of transcription ~~mannopine synthase~~ a transcriptional and translational initiation region regulating the expression of mannopine synthase of T-DNA, a structural gene coding 25 for  $\gamma$ -interferon and a termination region functional in plant cells, a second expression cassette comprising in the direction of transcription a transcriptional and translational initiation region regulatory the expression of octopine synthase of T-DNA, a structural 30 gene coding for an enzyme imparting antibiotic resistance to plant cells, and a termination region functional in plant cells, and a T-DNA boundary.

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